

IN THE CLAIMS

1. – 9. (Cancelled)

10. (Currently Amended) A method for the ~~prophylactic and/or therapeutic~~ treatment of dysuria that comprises:

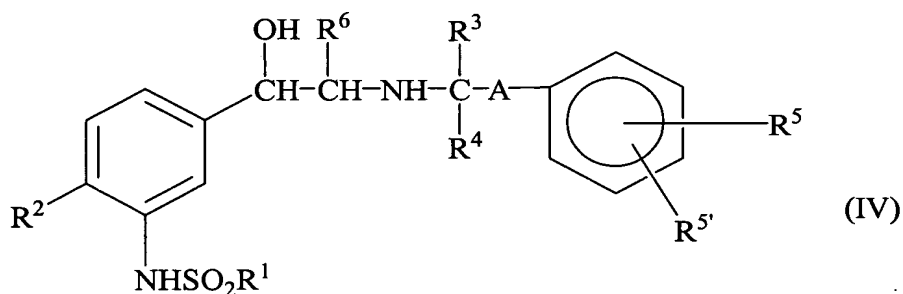
administering to ~~a human being or an animal~~ a subject in need of treatment for dysuria an ~~effective~~ amount of a compound effective to treat dysuria, which

wherein said compound is a β_3 adrenergic receptor agonist, having a general formula selected from the group consisting of formula (IV), (V), (VI), (VII) and (VIII),

or a salt or prodrug thereof, or for the compound of formula (VII) an ester or amide thereof;

wherein

(a) a compound of formula (IV) is represented by the following general formula:

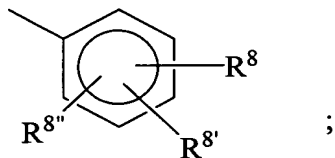


wherein

R^1 is lower alkyl, aryl or arylalkyl;

R^2 is hydrogen, hydroxy, alkoxy, $-\text{CH}_2\text{OH}$, cyano, $-\text{C}(\text{O})\text{OR}^7$, $-\text{CO}_2\text{H}$, $-\text{CONH}_2$, tetrazole, $-\text{CH}_2\text{NH}_2$ or halogen; where R^7 is lower alkyl;

R^3 is hydrogen, alkyl, heterocycle or



where R^8 , $R^{8'}$ and $R^{8''}$ are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, $-(CH_2)_nNR^6COR^7$, $-CON(R^6)R^{6'}$, $-CON(R^6)OR^{6'}$, $-CO_2R^6$, $-SR^7$, $-SOR^7$, $-SO_2R^7$, $-N(R^6)SO_2R^1$, $-N(R^6)R^{6'}$, $-NR^6COR^7$, $-OCH_2CON(R^6)R^{6'}$, $-OCH_2CO_2R^7$ or aryl; and R^8 and $R^{8'}$ may together with the carbon atoms to which they are attached form an aryl or heterocycle; where R^6 and $R^{6'}$ are independently hydrogen or lower alkyl, and R^7 is lower alkyl;

R^4 is hydrogen, alkyl or B; wherein B is $-CN$, $-CON(R^9)R^{9'}$ or $-CO_2R^7$, where R^7 is lower alkyl and R^9 and $R^{9'}$ are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl or R^9 and $R^{9'}$ may together with the nitrogen atom to which they are attached form a heterocycle;

R^5 , and $R^{5'}$, R^8 , $R^{8'}$ and $R^{8''}$ are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, $-(CH_2)_nNR^6COR^7$, $-CON(R^6)R^{6'}$, $-CON(R^6)OR^{6'}$, $-CO_2R^6$, $-SR^7$, $-SOR^7$, $-SO_2R^7$, $-N(R^6)SO_2R^1$, $-N(R^6)R^{6'}$, $-NR^6COR^7$, $-OCH_2CON(R^6)R^{6'}$, $-OCH_2CO_2R^7$ or aryl; or R^5 and $R^{5'}$ or R^8 and $R^{8'}$ may together with the carbon atoms to which they are attached form an aryl or heterocycle;

R^6 and $R^{6'}$ are independently hydrogen or lower alkyl; and

R^7 is lower alkyl;

R^9 and $R^{9'}$ are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl; or

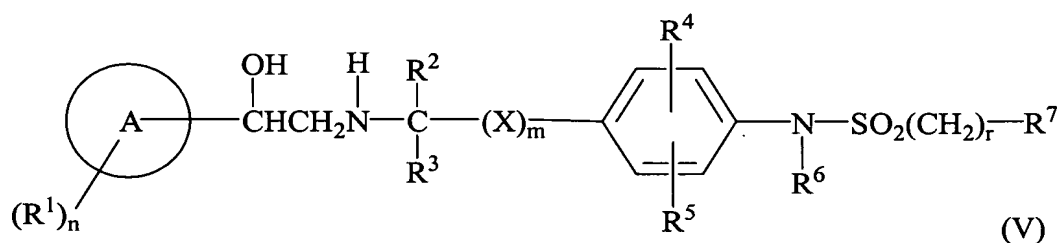
R^9 and $R^{9'}$ may together with the nitrogen atom to which they are attached form a heterocycle;

A is a bond, $-(CH_2)_n-$ or $-CH(B)-$, wherein n is an integer of 1, 2 or 3 and

B is -CN, -CON(R⁹)R^{9'} - or -CO₂R⁷;

with the proviso that when A is a bond or -(CH₂)_n- and R³ is hydrogen or unsubstituted alkyl, then R⁴ is B or substituted alkyl;

(b) a compound of formula (V) is represented by the following general formula:



wherein

~~n is 0 to 5;~~

~~m is 0 or 1;~~

~~r is 0 to 3;~~

A is pyridinyl;

R¹ is (1) hydroxy, (2) oxo, (3) halogen, (4) cyano, (5) NR⁸R⁸, (6) SR⁸,
 (7) trifluoromethyl, (8) C₁-C₁₀ alkyl, (9) OR⁸, (10) SO₂R⁹, (11) OCOR⁹, (12) NR⁸COR⁹,
 (13) COR⁹, (14) NR⁸SO₂R⁹, (15) NR⁸CO₂R⁸, or (16) C₁-C₁₀ alkyl substituted by hydroxy,
 halogen, cyano, NR⁸R⁸, SR⁸, trifluoromethyl, OR⁸, C₃-C₈ cycloalkyl, phenyl, NR⁸COR⁹,
 COR⁹, SO₂R⁹, OCOR⁹, NR⁸SO₂R⁹ or NR⁸CO₂R⁸; where

R⁸ is (1) hydrogen, (2) C₁-C₁₀alkyl, (3) C₃-C₈ cycloalkyl, (4) Z optionally
having 1 to 4 substituents selected from halogen, nitro, oxo, NR¹⁰R¹⁰, C₁-C₁₀ alkyl,
C₁-C₁₀ alkoxy, C₁-C₁₀ alkylthio, and C₁-C¹⁰ alkyl having 1 to 4 substituents selected
from hydroxy, halogen, CO₂H, CO₂-C₁-C₁₀ alkyl, SO₂-C₁-C₁₀ alkyl, C₃-C₈ cycloalkyl,
C₁-C₁₀ alkoxy, or Z optionally substituted by from 1 to 3 halogen, C₁-C₁₀ alkyl or C₁-
C₁₀ alkoxy, or (5) C₁-C₁₀ alkyl having 1 to 4 substituents selected from hydroxy,
halogen, CO₂H, CO₂-C₁-C₁₀ alkyl, SO₂-C₁-C₁₀ alkyl, C₃-C₈ cycloalkyl, C₁-C₁₀ alkoxy,

C₁-C₁₀ alkyl, or Z optionally substituted by from 1 to 4 halogen, C₁-C₁₀ alkyl or C₁-C₁₀ alkoxy;

R⁹ is (1) R⁸ or (2) NR⁸R⁸; and

R¹⁰ is (1) C₁-C₁₀ alkyl, or (2) two R¹⁰ groups together with the N to which they are attached forming a 5 or 6-membered ring optionally substituted with C₁-C₁₀ alkyl;

and Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a C₃-C₈ cycloalkyl ring, (5) a benzene ring fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a C₃-C₈ cycloalkyl ring;

n is 0 to 5;

R² and R³ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl or (3) C₁-C₁₀ alkyl with 1 to 4 substituents selected from hydroxy, C₁-C₁₀ alkoxy, or halogen;

X is (1) -CH₂-, (2) -CH₂-CH₂-, (3) -CH=CH- or (4) -CH₂O-; where m is 0 or 1;

R⁴ and R⁵ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl, (3) halogen, (4) NHR⁸, (5) OR⁸, (6) SO₂R⁹ or (7) NHSO₂R⁹;

R⁶ is (1) hydrogen or (2) C₁-C₁₀ alkyl;

r is 0 to 3; and

R⁷ is Z-(R^{1a})_n;

where Z is defined above and R^{1a} is (1) R¹, (2) C₃-C₈ cycloalkyl, (3) phenyl optionally substituted with up to 4 groups independently selected from R⁸, NR⁸R⁸,

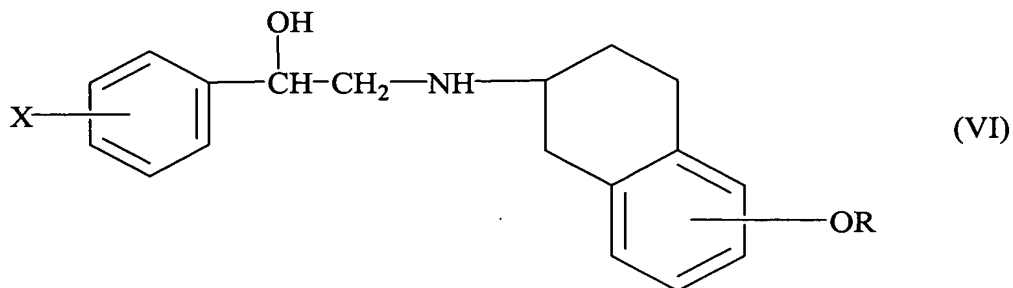
OR^8 , SR^8 or halogen, or (4) 5 or 6-membered heterocycle with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, optionally substituted with up to four groups independently selected from oxo, R^8 , NR^8R^8 , OR^8 , SR^8 , or halogen; Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a C_3 - C_8 cycloalkyl ring, (5) a benzene ring fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a C_3 - C_8 cycloalkyl ring;

R^8 is (1) hydrogen, (2) C_1 - C_{10} alkyl, (3) C_3 - C_8 cycloalkyl, (4) Z optionally having 1 to 4 substituents selected from halogen, nitro, oxo, $\text{NR}^{10}\text{R}^{10}$, C_1 - C_{10} alkyl, C_1 - C_{10} alkoxy, C_1 - C_{10} alkylthio, and C_1 - C^{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , CO_2 - C_1 - C_{10} alkyl, SO_2 - C_1 - C_{10} alkyl, C_3 - C_8 cycloalkyl, C_1 - C_{10} alkoxy, or Z optionally substituted by from 1 to 3 halogen, C_1 - C_{10} alkyl or C_1 - C_{10} alkoxy, or (5) C_1 - C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , CO_2 - C_1 - C_{10} alkyl, SO_2 - C_1 - C_{10} alkyl, C_3 - C_8 cycloalkyl, C_1 - C_{10} alkoxy, C_1 - C_{10} alkyl, or Z optionally substituted by from 1 to 4 halogen, C_1 - C_{10} alkyl or C_1 - C_{10} alkoxy; and where n is 0 to 5;

R^9 is (1) R^8 or (2) NR^8R^8 ; and

R^{10} is (1) C_1 - C_{10} alkyl, or (2) two R^{10} groups together with the N to which they are attached forming a 5 or 6-membered ring optionally substituted with C_1 - C_{10} alkyl;

(c) a compound of formula (VI) is:

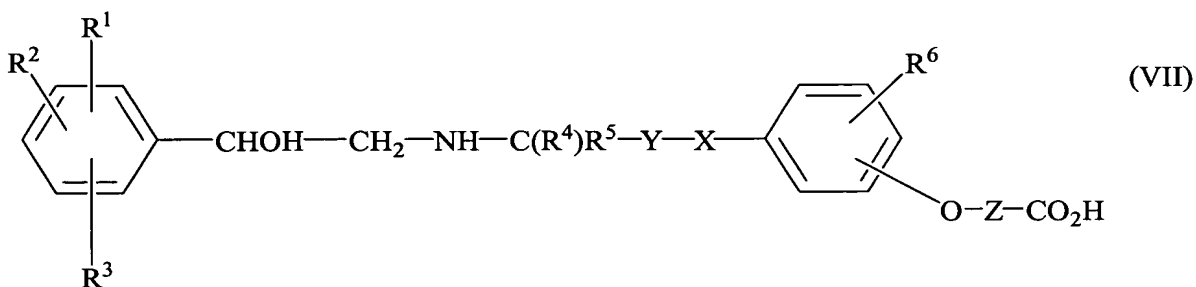
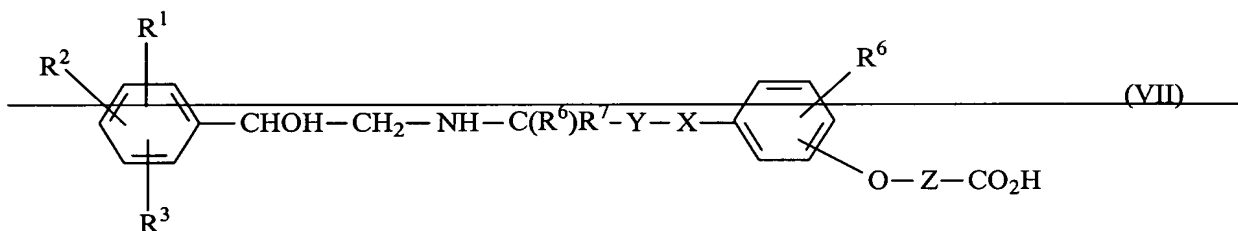


wherein

X is hydrogen, halogen, trifluoromethyl or lower alkyl, and

R is hydrogen; or lower alkyl which may have a suitable substituent selected from the group consisting of cyclo(C₃-C₇)alkyl, hydroxy, lower alkoxy, carboxy and lower alkoxycarbonyl; cyclo(C₃-C₇)alkyl ~~or~~ and lower alkanoyl;

(d) a compound of formula (VII) ~~is represented by the following general formula:~~



wherein

R¹ is a hydrogen, fluorine, chlorine, ~~or~~ bromine atom, or a hydroxyl, hydroxymethyl, methyl, methoxyl, amino, formamido, acetamido, methylsulphonylamido, nitro, benzyloxy, methylsulphonylmethyl, ureido, trifluoromethyl or p-methoxybenzylamino group;

R^2 is a hydrogen, fluorine, chlorine or bromine atom or a hydroxyl group;

R^3 is a hydrogen, chlorine or bromine atom or a hydroxyl group,

R^4 is a hydrogen atom or a methyl group;

R^5 is a hydrogen atom or a methyl group;

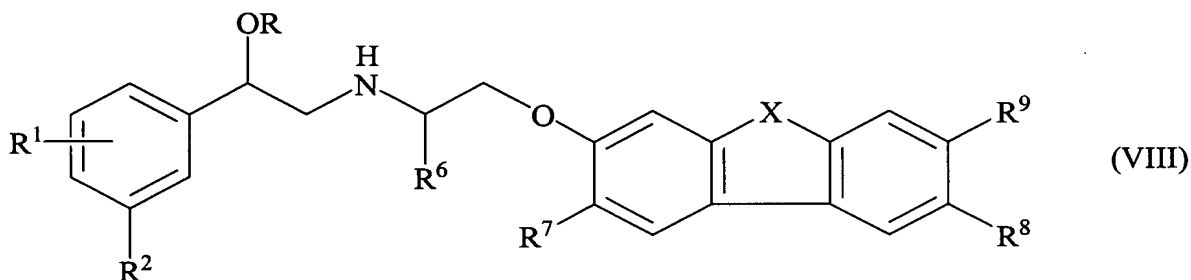
R^6 is a hydrogen, fluorine or chlorine atom or a methyl, methoxyl or hydroxy group;

X is an oxygen atom or a bond;

Y is an alkylene group of up to 6 carbon atoms or a bond; and

Z is an alkylene, alkenylene or alkynylene group of up to 10 carbon atoms; and

(e) a compound of formula (VIII) is represented by the following general formula:



wherein

R is hydrogen or methyl,

R^1 is hydrogen, halogen, hydroxy, benzyloxy, amino or hydroxymethyl,

R^2 is hydrogen, hydroxymethyl, $-NHR^3$, $-SO_2NR^4R^{4'}$ or nitro, where R^3 is hydrogen, methyl, $-SO_2R^5$, formyl or $-CONHR^{6'}$ and R^4 and $R^{4'}$ are independently hydrogen, lower alkyl or benzyl; and R^5 is lower alkyl, benzyl or $-NR^4R^{4'}$; and $R^{6'}$ is hydrogen or lower alkyl;

~~R^3 is hydrogen, methyl, $-SO_2R^5$, formyl or $-CONHR^{6'}$;~~

~~R^4 and $R^{4'}$ are independently hydrogen, lower alkyl or benzyl,~~

~~R^5 is lower alkyl, benzyl or $-NR^4R^{4'}$;~~

R^6 is hydrogen or lower alkyl,

~~$R^{6'}$ is hydrogen or lower alkyl and~~

R⁷ is hydrogen, amino, acetylamino, or hydroxyl;

R⁸ is hydrogen, amino, acetylamino, or hydroxyl;

X is N, O, S or methylene;

~~R⁶ is hydrogen or lower alkyl;~~

~~R⁹ is hydrogen, amino, acetylamino or hydroxy; and~~

~~X is N, O, S or methylene;~~

provided that when X is N, O or S,

then R⁹ is hydrogen, either R⁷ or R⁸ is hydrogen, and the other is hydrogen, amino, acetylamino or hydroxy; and

provided that when X is methylene,

then both R⁷ and R⁸ are hydrogen.

11. (Previously Presented) The method of Claim 10 comprising administering the compound of formula (IV) or a salt thereof.

12. (Previously Presented) The method of Claim 10 comprising administering the compound of formula (V) or a salt thereof.

13. (Previously Presented) The method of Claim 10, comprising administering the compound of formula (VI) or a salt thereof.

14. (Previously Presented) The method of Claim 10, comprising administering the compound of formula (VII) or a salt, ester or amide thereof.

15. (Previously Presented) The method of Claim 10, comprising administering the compound of formula (VIII) or a salt thereof.

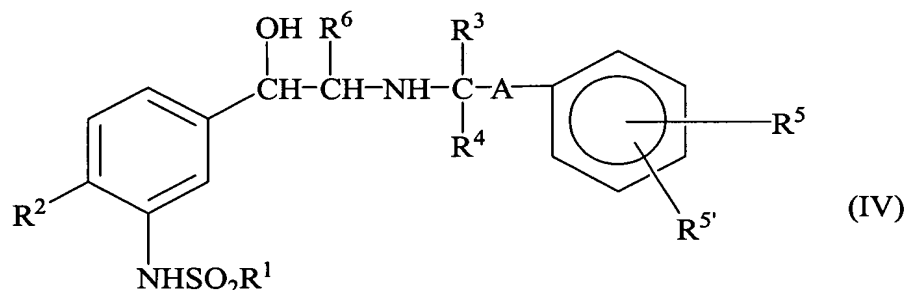
16. (Previously Presented) The method of claim 10 wherein said compound is in the form of a prodrug.

17. (Currently Amended): A method for the ~~prophylactic and/or the therapeutic~~ treatment of pollakiuria or urinary incontinence comprising:

administering to a subject in need of treatment for pollakiuria or urinary incontinence
an thereof an effective amount of a compound effective to treat pollakiuria or urinary
incontinence, wherein said compound ~~which~~ is a $\beta 3$ adrenergic receptor agonist, having a
 general formula selected from the group consisting of formula (IV), (V), (VI), (VII) and
 (VIII), or a salt or prodrug thereof, or for the compound of formula (VII) an ester or amide
 thereof;

wherein

(a) a compound of formula (IV) is represented by the following general formula:

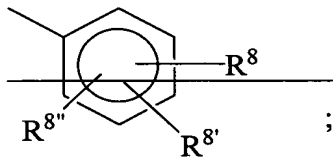


wherein

~~R¹ is lower alkyl, aryl or arylalkyl;~~

~~R² is hydrogen, hydroxy, alkoxy, CH₂OH, cyano, C(O)OR⁷, CO₂H, CONH₂,
 tetrazole, CH₂NH₂ or halogen;~~

~~R³ is hydrogen, alkyl, heterocycle or~~



~~R⁴ is hydrogen, alkyl or B;~~

~~R⁵, R^{5'}, R⁸, R^{8'} and R^{8''} are independently hydrogen, alkoxy, lower alkyl, halogen,
 OH, CN, (CH₂)_nNR⁶COR⁷, CON(R⁶)R^{6'}, CON(R⁶)OR^{6'}, CO₂R⁶, SR⁷, SOR⁷, SO₂R⁷,
 N(R⁶)SO₂R¹, N(R⁶)R^{6'}, NR⁶COR⁷, OCH₂CON(R⁶)R^{6'}, OCH₂CO₂R⁷ or aryl; or~~

~~R⁵ and R^{5'} or R⁸ and R^{8'} may together with the carbon atoms to which they are attached form an aryl or heterocycle;~~

~~R⁶ and R^{6'} are independently hydrogen or lower alkyl; and~~

~~R⁷ is lower alkyl;~~

~~R⁹ and R^{9'} are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl; or~~

~~R⁹ and R^{9'} may together with the nitrogen atom to which they are attached form a heterocycle;~~

~~A is a bond, (CH₂)_n or CH(B), wherein n is an integer of 1, 2 or 3 and B is CN, CON(R⁹)R^{9'} or CO₂R⁷;~~

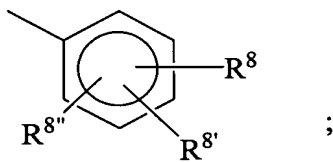
~~with the proviso that when A is a bond or (CH₂)_n and R³ is hydrogen or unsubstituted alkyl, then R⁴ is B or substituted alkyl;~~

wherein

R¹ is lower alkyl, aryl or arylalkyl;

R² is hydrogen, hydroxy, alkoxy, -CH₂OH, cyano, -C(O)OR⁷, -CO₂H, -CONH₂, tetrazole, -CH₂NH₂ or halogen; where R⁷ is lower alkyl;

R³ is hydrogen, alkyl, heterocycle or



where R⁸, R^{8'} and R^{8''} are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, -(CH₂)_nNR⁶COR⁷, -CON(R⁶)R^{6'}, -CON(R⁶)OR^{6'}, -CO₂R⁶, -SR⁷, -SOR⁷, -SO₂R⁷, -N(R⁶)SO₂R¹, -N(R⁶)R^{6'}, -NR⁶COR⁷, -OCH₂CON(R⁶)R^{6'}, -OCH₂CO₂R⁷ or aryl; and R⁸ and R^{8'} may together with the carbon atoms to which they are attached form an aryl or heterocycle; where R⁶ and R^{6'} are independently hydrogen or lower alkyl, R⁷ is lower alkyl;

R⁴ is hydrogen, alkyl or B; wherein B is -CN, -CON(R⁹)R^{9'} - or -CO₂R⁷, where R⁷ is lower alkyl and R⁹ and R^{9'} are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl or R⁹ and R^{9'} may together with the nitrogen atom to which they are attached form a heterocycle;

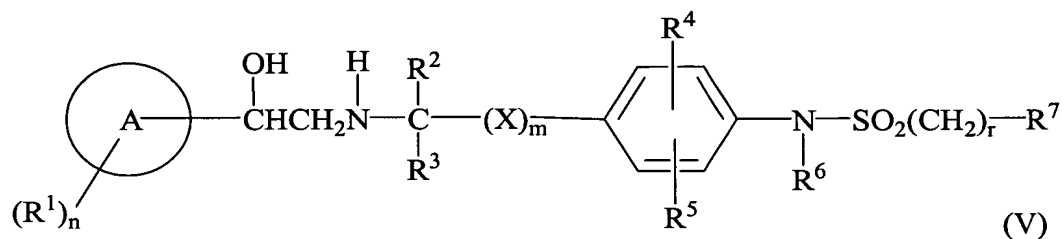
R⁵ and R^{5'}, are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, -(CH₂)_nNR⁶COR⁷, -CON(R⁶)R^{6'}, -CON(R⁶)OR^{6'}, -CO₂R⁶, -SR⁷, -SOR⁷, -SO₂R⁷, -N(R⁶)SO₂R¹, -N(R⁶)R^{6'}, -NR⁶COR⁷, -OCH₂CON(R⁶)R^{6'}, -OCH₂CO₂R⁷ or aryl; or R⁵ and R^{5'} may together with the carbon atoms to which they are attached form an aryl or heterocycle;

R⁶ is independently hydrogen or lower alkyl; and

A is a bond, -(CH₂)_n- or -CH(B)-, wherein n is an integer of 1, 2 or 3 and B is -CN, -CON(R⁹)R^{9'} - or -CO₂R⁷;

with the proviso that when A is a bond or -(CH₂)_n- and R³ is hydrogen or unsubstituted alkyl, then R⁴ is B or substituted alkyl;

(b) a compound of formula (V) is represented by the following general formula:



wherein

~~n is 0 to 5;~~

~~m is 0 or 1;~~

~~r is 0 to 3;~~

A is pyridinyl;

R^1 is (1) hydroxy, (2) oxo, (3) halogen, (4) cyano, (5) NR^8R^8 , (6) SR^8 , (7) trifluoromethyl, (8) C_1 - C_{10} -alkyl, (9) OR^8 , (10) SO_2R^9 , (11) $OCOR^9$, (12) NR^8COR^9 , (13) COR^9 , (14) $NR^8SO_2R^9$, (15) $NR^8CO_2R^8$, or (16) C_1 - C_{10} -alkyl substituted by hydroxy, halogen, cyano, NR^8R^8 , SR^8 , trifluoromethyl, OR^8 , C_3 - C_8 -cycloalkyl, phenyl, NR^8COR^9 , COR^9 , SO_2R^9 , $OCOR^9$, $NR^8SO_2R^9$ or $NR^8CO_2R^8$;

R^2 and R^3 are independently (1) hydrogen, (2) C_1 - C_{10} -alkyl or (3) C_1 - C_{10} -alkyl with 1 to 4 substituents selected from hydroxy, C_1 - C_{10} -alkoxy, or halogen;

X is (1) CH_2 , (2) CH_2CH_2 , (3) $CH=CH$ or (4) CH_2O ;

R^4 and R^5 are independently (1) hydrogen, (2) C_1 - C_{10} -alkyl, (3) halogen, (4) NHR^8 , (5) OR^8 , (6) SO_2R^9 or (7) $NHSO_2R^9$;

R^6 is (1) hydrogen or (2) C_1 - C_{10} -alkyl;

R^7 is $Z(R^{1a})_n$;

R^{1a} is (1) R^1 , (2) C_3 - C_8 -cycloalkyl, (3) phenyl optionally substituted with up to 4 groups independently selected from R^8 , NR^8R^8 , OR^8 , SR^8 or halogen, or (4) 5 or 6-membered heterocycle with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, optionally substituted with up to four groups independently selected from oxo, R^8 , NR^8R^8 , OR^8 , SR^8 , or halogen;

Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a C_3 - C_8 -cycloalkyl ring, (5) a benzene ring fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a C_3 - C_8 -cycloalkyl ring;

R^8 is (1) hydrogen, (2) C_1-C_{10} alkyl, (3) C_3-C_8 cycloalkyl, (4) Z optionally having 1 to 4 substituents selected from halogen, nitro, oxo, $NR^{10}R^{10}$, C_1-C_{10} alkyl, C_1-C_{10} alkoxy, C_1-C_{10} alkylthio, and C_1-C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $CO_2-C_1-C_{10}$ alkyl, $SO_2-C_1-C_{10}$ alkyl, C_3-C_8 cycloalkyl, C_1-C_{10} alkoxy, or Z optionally substituted by from 1 to 3 halogen, C_1-C_{10} alkyl or C_1-C_{10} alkoxy, or (5) C_1-C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $CO_2-C_1-C_{10}$ alkyl, $SO_2-C_1-C_{10}$ alkyl, C_3-C_8 cycloalkyl, C_1-C_{10} alkoxy, C_1-C_{10} alkyl, or Z optionally substituted by from 1 to 4 halogen, C_1-C_{10} alkyl or C_1-C_{10} alkoxy;

R^9 is (1) R^8 or (2) NR^8R^8 ; and

R^{10} is (1) C_1-C_{10} alkyl, or (2) two R_{10} groups together with the N to which they are attached forming a 5 or 6 membered ring optionally substituted with C_1-C_{10} alkyl;

wherein

A is pyridinyl;

R^1 is (1) hydroxy, (2) oxo, (3) halogen, (4) cyano, (5) NR^8R^8 , (6) SR^8 , (7) trifluoromethyl, (8) C_1-C_{10} alkyl, (9) OR^8 , (10) SO_2R^9 , (11) $OCOR^9$, (12) NR^8COR^9 , (13) COR^9 , (14) $NR^8SO_2R^9$, (15) $NR^8CO_2R^8$, or (16) C_1-C_{10} alkyl substituted by hydroxy, halogen, cyano, NR^8R^8 , SR^8 , trifluoromethyl, OR^8 , C_3-C_8 cycloalkyl, phenyl, NR^8COR^9 , COR^9 , SO_2R^9 , $OCOR^9$, $NR^8SO_2R^9$ or $NR^8CO_2R^8$; where

R^8 is (1) hydrogen, (2) C_1-C_{10} alkyl, (3) C_3-C_8 cycloalkyl, (4) Z optionally having 1 to 4 substituents selected from halogen, nitro, oxo, $NR^{10}R^{10}$, C_1-C_{10} alkyl, C_1-C_{10} alkoxy, C_1-C_{10} alkylthio, and C_1-C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $CO_2-C_1-C_{10}$ alkyl, $SO_2-C_1-C_{10}$ alkyl, C_3-C_8 cycloalkyl, C_1-C_{10} alkoxy, or Z optionally substituted by from 1 to 3 halogen, C_1-C_{10} alkyl or C_1-C_{10} alkoxy, or (5) C_1-C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $CO_2-C_1-C_{10}$ alkyl, $SO_2-C_1-C_{10}$ alkyl, C_3-C_8 cycloalkyl, C_1-C_{10} alkoxy,

C₁-C₁₀ alkyl, or Z optionally substituted by from 1 to 4 halogen, C₁-C₁₀ alkyl or C₁-C₁₀ alkoxy;

R⁹ is (1) R⁸ or (2) NR⁸R⁸; and

R¹⁰ is (1) C₁-C₁₀ alkyl, or (2) two R¹⁰ groups together with the N to which they are attached forming a 5 or 6-membered ring optionally substituted with C₁-C₁₀ alkyl;

and Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a C₃-C₈cycloalkyl ring, (5) a benzene ring fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a C₃-C₈ cycloalkyl ring;

n is 0 to 5;

R² and R³ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl or (3) C₁-C₁₀ alkyl with 1 to 4 substituents selected from hydroxy, C₁-C₁₀ alkoxy, or halogen;

X is (1) -CH₂-, (2) -CH₂-CH₂-, (3) -CH=CH- or (4) -CH₂O-; where m is 0 or 1;

R⁴ and R⁵ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl, (3) halogen, (4) NHR⁸, (5) OR⁸, (6) SO₂R⁹ or (7) NHSO₂R⁹;

R⁶ is (1) hydrogen or (2) C₁-C₁₀ alkyl;

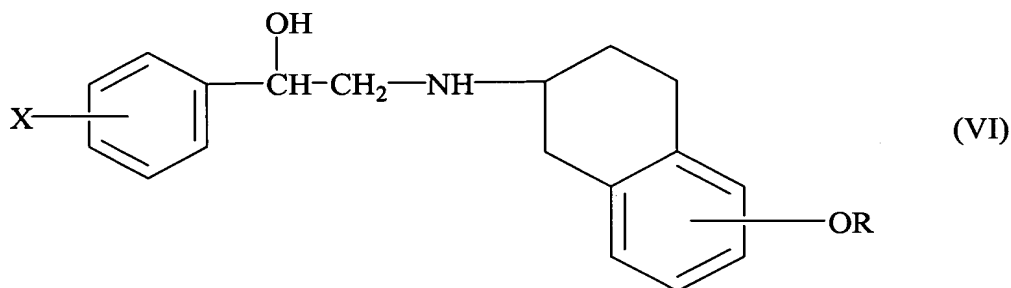
r is 0 to 3; and

R⁷ is Z-(R^{1a})_n;

where Z is defined above and R^{1a} is (1) R¹, (2) C₃-C₈ cycloalkyl, (3) phenyl optionally substituted with up to 4 groups independently selected from R⁸, NR⁸R⁸, OR⁸, SR⁸ or halogen,

or (4) 5 or 6-membered heterocycle with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, optionally substituted with up to four groups independently selected from oxo, R^8 , NR^8R^8 , OR^8 , SR^8 , or halogen;

(c) a compound of formula (VI) is:

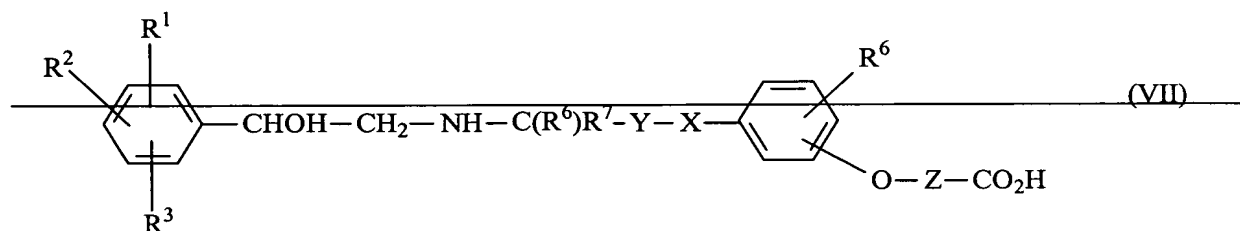


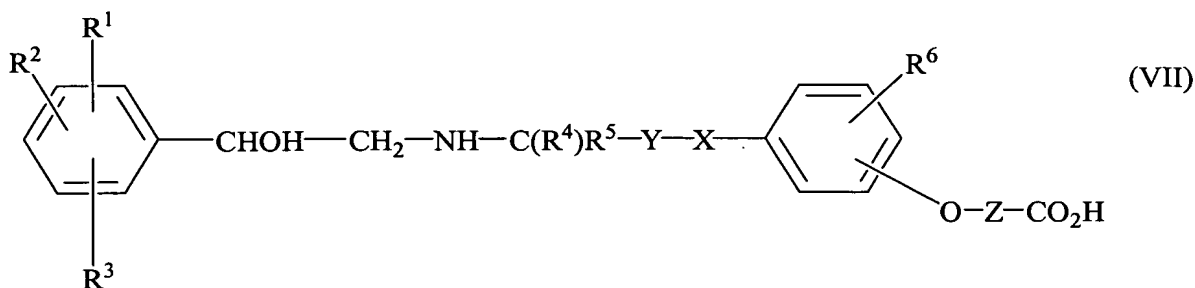
wherein

X is hydrogen, halogen, trifluoromethyl or lower alkyl, and

R is hydrogen; or lower alkyl which may have a suitable substituent selected from the group consisting of cyclo(C_3 - C_7)alkyl, hydroxy, lower alkoxy, carboxy and lower alkoxycarbonyl; cyclo(C_3 - C_7)alkyl ~~or~~ and lower alkanoyl;

(d) a compound of formula (VII) is represented by the following general formula:





wherein

R^1 is a hydrogen, fluorine, chlorine, or bromine atom or a hydroxyl, hydroxymethyl, methyl, methoxyl, amino, formamido, acetamido, methylsulphonylamido, nitro, benzyloxy, methylsulphonylmethyl, ureido, trifluoromethyl or p-methoxybenzylamino group;

R^2 is a hydrogen, fluorine, chlorine or bromine atom or a hydroxyl group;

R^3 is a hydrogen, chlorine or bromine atom or a hydroxyl group,

R^4 is a hydrogen atom or a methyl group;

R^5 is a hydrogen atom or a methyl group;

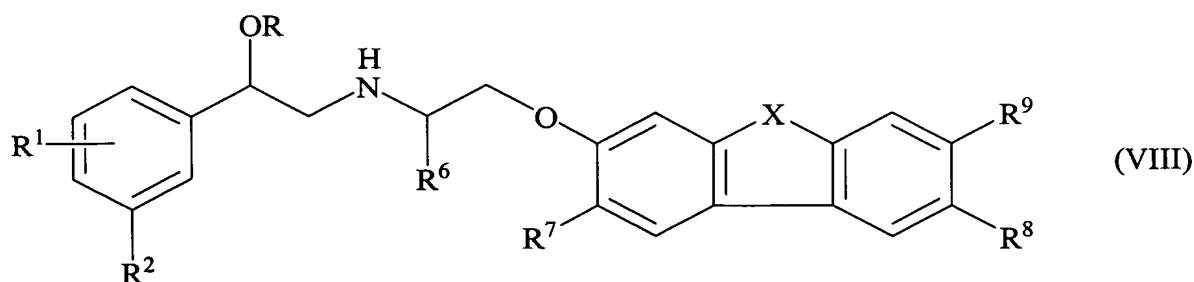
R^6 is a hydrogen, fluorine or chlorine atom or a methyl, methoxyl or hydroxy group;

X is an oxygen atom or a bond;

Y is an alkylene group of up to 6 carbon atoms or a bond; and

Z is an alkylene, alkenylene or alkynylene group of up to 10 carbon atoms; and

(e) a compound of formula (VIII) is represented by the following general formula:



wherein

~~R is hydrogen or methyl,~~

~~R¹ is hydrogen, halogen, hydroxy, benzyloxy, amino or hydroxymethyl,~~
~~R² is hydrogen, hydroxymethyl, -NHR³, -SO₂NR⁴R^{4'} or nitro,~~
~~R³ is hydrogen, methyl, -SO₂R⁵, formyl or -CONHR^{6'},~~
~~R⁴ and R^{4'} are independently hydrogen, lower alkyl or benzyl,~~
~~R⁵ is lower alkyl, benzyl or -NR⁴R^{4'},~~
~~R⁶ is hydrogen or lower alkyl,~~
~~R^{6'} is hydrogen or lower alkyl,~~
~~R⁹ is hydrogen, amino, acetyl amino or hydroxy, and~~
~~X is N, O, S or methylene;~~
~~provided that when X is N, O or S,~~
~~then R⁹ is hydrogen, either R⁷ or R⁸ is hydrogen, and the other is hydrogen, amino,~~
~~acetyl amino or hydroxy; and~~
~~provided that when X is methylene,~~
~~then both R⁷ and R⁸ are hydrogen~~
R¹ is hydrogen, halogen, hydroxy, benzyloxy, amino or hydroxymethyl,
R² is hydrogen, hydroxymethyl, -NHR³, -SO₂NR⁴R^{4'} or nitro, where R³ is hydrogen,
methyl, -SO₂R⁵, formyl or -CONHR⁶, where R^{6'} is hydrogen or lower alkyl; R⁴ and R^{4'} are
independently hydrogen, lower alkyl or benzyl; and R⁵ is lower alkyl, benzyl or -NR⁴R^{4'};
R is hydrogen or methyl,
R⁶ is hydrogen or lower alkyl;
R⁷ is hydrogen, amino, acetyl amino, or hydroxyl;
X is N, O, S or methylene;
R⁸ is hydrogen, amino, acetyl amino, or hydroxyl;
R⁹ is hydrogen, amino, acetyl amino or hydroxy;
provided that when X is N, O or S,

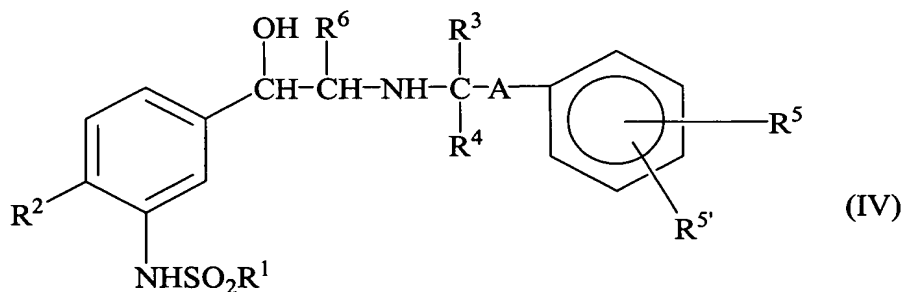
then R⁹ is hydrogen, either R⁷ or R⁸ is hydrogen, and the other is hydrogen, amino, acetylamino or hydroxy; and
provided that when X is methylene,
then both R⁷ and R⁸ are hydrogen.

18. (Currently Amended): A method for the ~~prophylactic and/or the therapeutic~~ treatment of a disease or disorder selected from the group consisting of nervous pollakiuria, neurogenic bladder dysfunction, nocturia, unstable bladder, cystospasm, chronic cystitis, chronic prostatitis, overflow incontinence, passive incontinence, reflex incontinence, urge incontinence, and urinary stress incontinence, comprising:

administering to a subject in need of treatment of said disease or disorder and amount of a compound effect to treat said disease or disorder, wherein said compound ~~in need thereof~~ ~~an effective amount of a compound,~~ which is a β 3 adrenergic receptor agonist, having a general formula selected from the group consisting of formula (IV), (V), (VI), (VII) and (VIII), or a salt or prodrug thereof, or for the compound of formula (VII) an ester or amide thereof;

wherein

(a) a compound of formula (IV) is represented by the following general formula:

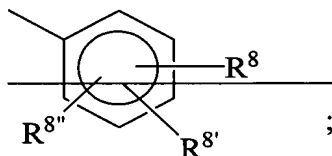


wherein

~~R¹ is lower alkyl, aryl or arylalkyl;~~

R^2 is hydrogen, hydroxy, alkoxy, CH_2OH , cyano, C(O)OR^7 , CO_2H , CONH_2 , tetrazole, CH_2NH_2 or halogen;

R^3 is hydrogen, alkyl, heterocycle or



R^4 is hydrogen, alkyl or B;

R^5 , $R^{5'}$, R^8 , $R^{8'}$ and $R^{8''}$ are independently hydrogen, alkoxy, lower alkyl, halogen, OH , CN , $(\text{CH}_2)_n\text{NR}^6\text{COR}^7$, $\text{CON(R}^6\text{)R}^{6'}$, $\text{CON(R}^6\text{)OR}^{6'}$, CO_2R^6 , SR^7 , SOR^7 , SO_2R^7 , $\text{N(R}^6\text{)SO}_2\text{R}^1$, $\text{N(R}^6\text{)R}^{6'}$, NR^6COR^7 , $\text{OCH}_2\text{CON(R}^6\text{)R}^{6'}$, $\text{OCH}_2\text{CO}_2\text{R}^7$ or aryl; or

R^5 and $R^{5'}$ or R^8 and $R^{8'}$ may together with the carbon atoms to which they are attached form an aryl or heterocycle;

R^6 and $R^{6'}$ are independently hydrogen or lower alkyl; and

R^7 is lower alkyl;

R^9 and $R^{9'}$ are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl; or

R^9 and $R^{9'}$ may together with the nitrogen atom to which they are attached form a heterocycle;

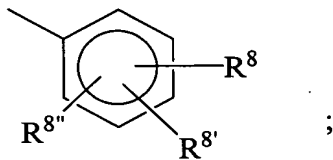
A is a bond, $(\text{CH}_2)_n$ or CH(B) , wherein n is an integer of 1, 2 or 3 and B is CN , $\text{CON(R}^9\text{)R}^{9'}$ or CO_2R^7 ;

with the proviso that when A is a bond or $(\text{CH}_2)_n$ and R^3 is hydrogen or unsubstituted alkyl, then R^4 is B or substituted alkyl;

R^1 is lower alkyl, aryl or arylalkyl;

R² is hydrogen, hydroxy, alkoxy, -CH₂OH, cyano, -C(O)OR⁷, -CO₂H, -CONH₂, tetrazole, -CH₂NH₂ or halogen; where R⁷ is lower alkyl;

R³ is hydrogen, alkyl, heterocycle or



where R⁸, R^{8'} and R^{8''} are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, -(CH₂)_nNR⁶COR⁷, -CON(R⁶)R^{6'}, -CON(R⁶)OR^{6'}, -CO₂R⁶, -SR⁷, -SOR⁷, -SO₂R⁷, -N(R⁶)SO₂R¹, -N(R⁶)R^{6'}, -NR⁶COR⁷, -OCH₂CON(R⁶)R^{6'}, -OCH₂CO₂R⁷ or aryl; and R⁸ and R^{8'} may together with the carbon atoms to which they are attached form an aryl or heterocycle; where R⁶ and R^{6'} are independently hydrogen or lower alkyl, R⁷ is lower alkyl;

R⁴ is hydrogen, alkyl or B; wherein B is -CN, -CON(R⁹)R^{9'} - or -CO₂R⁷, where R⁷ is lower alkyl and R⁹ and R^{9'} are independently hydrogen, lower alkyl, alkyl, cycloalkyl, arylalkyl, aryl, heteroaryl or R⁹ and R^{9'} may together with the nitrogen atom to which they are attached form a heterocycle;

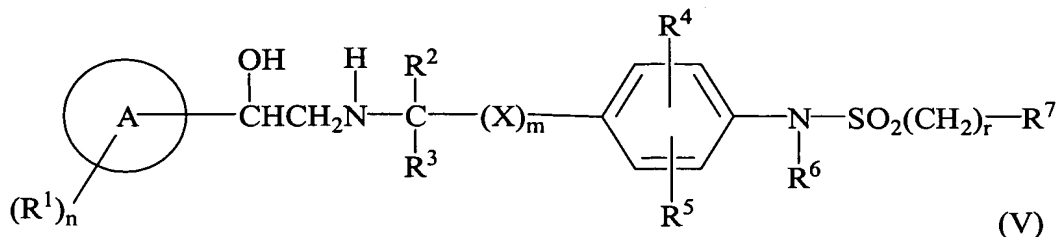
R⁵ and R^{5'} are independently hydrogen, alkoxy, lower alkyl, halogen, -OH, -CN, -(CH₂)_nNR⁶COR⁷, -CON(R⁶)R^{6'}, -CON(R⁶)OR^{6'}, -CO₂R⁶, -SR⁷, -SOR⁷, -SO₂R⁷, -N(R⁶)SO₂R¹, -N(R⁶)R^{6'}, -NR⁶COR⁷, -OCH₂CON(R⁶)R^{6'}, -OCH₂CO₂R⁷ or aryl; or R⁵ and R^{5'} may together with the carbon atoms to which they are attached form an aryl or heterocycle;

R⁶ is independently hydrogen or lower alkyl; and

A is a bond, -(CH₂)_n- or -CH(B)-, wherein n is an integer of 1, 2 or 3 and B is -CN, -CON(R⁹)R^{9'} - or -CO₂R⁷;

with the proviso that when A is a bond or -(CH₂)_n- and R³ is hydrogen or unsubstituted alkyl, then R⁴ is B or substituted alkyl;

(b) a compound of formula (V) is represented by the following general formula:



wherein

n is 0 to 5;

m is 0 or 1;

r is 0 to 3;

A is pyridinyl;

R^1 is (1) hydroxy, (2) oxo, (3) halogen, (4) cyano, (5) NR^8R^8 , (6) SR^8 , (7) trifluoromethyl, (8) $\text{C}_1\text{--C}_{10}$ -alkyl, (9) OR^8 , (10) SO_2R^9 , (11) OCOR^9 , (12) NR^8COR^9 , (13) COR^9 , (14) $\text{NR}^8\text{SO}_2\text{R}^9$, (15) $\text{NR}^8\text{CO}_2\text{R}^8$, or (16) $\text{C}_1\text{--C}_{10}$ -alkyl substituted by hydroxy, halogen, cyano, NR^8R^8 , SR^8 , trifluoromethyl, OR^8 , $\text{C}_3\text{--C}_8$ -cycloalkyl, phenyl, NR^8COR^9 , COR^9 , SO_2R^9 , OCOR^9 , $\text{NR}^8\text{SO}_2\text{R}^9$ or $\text{NR}^8\text{CO}_2\text{R}^8$;

R^2 and R^3 are independently (1) hydrogen, (2) $\text{C}_1\text{--C}_{10}$ -alkyl or (3) $\text{C}_1\text{--C}_{10}$ -alkyl with 1 to 4 substituents selected from hydroxy, $\text{C}_1\text{--C}_{10}$ -alkoxy, or halogen;

X is (1) CH_2 , (2) CH_2 , (3) CH=CH or (4) CH_2O ;

R^4 and R^5 are independently (1) hydrogen, (2) $\text{C}_1\text{--C}_{10}$ -alkyl, (3) halogen, (4) NHR^8 , (5) OR^8 , (6) SO_2R^9 or (7) NHSO_2R^9 ;

R^6 is (1) hydrogen or (2) $\text{C}_1\text{--C}_{10}$ -alkyl;

R^7 is $\text{Z}(\text{R}^{1a})_n$;

R^{1a} is (1) R^1 , (2) $\text{C}_3\text{--C}_8$ -cycloalkyl, (3) phenyl optionally substituted with up to 4 groups independently selected from R^8 , NR^8R^8 , OR^8 , SR^8 or halogen, or (4) 5 or 6-membered heterocycle with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, optionally

substituted with up to four groups independently selected from oxo, R^8 , NR^8R^8 , OR^8 , SR^8 , or halogen;

Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6 membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a C_3 - C_8 cycloalkyl ring, (5) a benzene ring fused to a 5 or 6 membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6 membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6 membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6 membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a C_3 - C_8 cycloalkyl ring;

R^8 is (1) hydrogen, (2) C_1 - C_{10} alkyl, (3) C_3 - C_8 cycloalkyl, (4) Z optionally having 1 to 4 substituents selected from halogen, nitro, oxo, $NR^{10}R^{10}$, C_1 - C_{10} alkyl, C_1 - C_{10} alkoxy, C_1 - C_{10} alkylthio, and C_1 - C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , CO_2 - C_1 - C_{10} alkyl, SO_2 - C_1 - C_{10} alkyl, C_3 - C_8 cycloalkyl, C_1 - C_{10} alkoxy, or Z optionally substituted by from 1 to 3 halogen, C_1 - C_{10} alkyl or C_1 - C_{10} alkoxy, or (5) C_1 - C_{10} alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , CO_2 - C_1 - C_{10} alkyl, SO_2 - C_1 - C_{10} alkyl, C_3 - C_8 cycloalkyl, C_1 - C_{10} alkoxy, C_1 - C_{10} alkyl, or Z optionally substituted by from 1 to 4 halogen, C_1 - C_{10} alkyl or C_1 - C_{10} alkoxy;

R^9 is (1) R^8 or (2) NR^8R^8 ; and

R^{10} is (1) C_1 - C_{10} alkyl, or (2) two R^{10} groups together with the N to which they are attached forming a 5 or 6 membered ring optionally substituted with C_1 - C_{10} alkyl;

A is pyridinyl;

R^1 is (1) hydroxy, (2) oxo, (3) halogen, (4) cyano, (5) NR^8R^8 , (6) SR^8 , (7) trifluoromethyl, (8) C_1 - C_{10} alkyl, (9) OR^8 , (10) SO_2R^9 , (11) $OCOR^9$, (12) NR^8COR^9 , (13) COR^9 , (14) $NR^8SO_2R^9$, (15) $NR^8CO_2R^8$, or (16) C_1 - C_{10} alkyl substituted by hydroxy,

halogen, cyano, NR^8R^8 , SR^8 , trifluoromethyl, OR^8 , $\text{C}_3\text{-C}_8$ cycloalkyl, phenyl, NR^8COR^9 , COR^9 , SO_2R^9 , OCOR^9 , $\text{NR}^8\text{SO}_2\text{R}^9$ or $\text{NR}^8\text{CO}_2\text{R}^8$; where

R^8 is (1) hydrogen, (2) $\text{C}_1\text{-C}_{10}$ alkyl, (3) $\text{C}_3\text{-C}_8$ cycloalkyl, (4) Z optionally having 1 to 4 substituents selected from halogen, nitro, oxo, $\text{NR}^{10}\text{R}^{10}$, $\text{C}_1\text{-C}_{10}$ alkyl, $\text{C}_1\text{-C}_{10}$ alkoxy, $\text{C}_1\text{-C}_{10}$ alkylthio, and $\text{C}_1\text{-C}^{10}$ alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $\text{CO}_2\text{-C}_1\text{-C}_{10}$ alkyl, $\text{SO}_2\text{-C}_1\text{-C}_{10}$ alkyl, $\text{C}_3\text{-C}_8$ cycloalkyl, $\text{C}_1\text{-C}_{10}$ alkoxy, or Z optionally substituted by from 1 to 3 halogen, $\text{C}_1\text{-C}_{10}$ alkyl or $\text{C}_1\text{-C}_{10}$ alkoxy, or (5) $\text{C}_1\text{-C}_{10}$ alkyl having 1 to 4 substituents selected from hydroxy, halogen, CO_2H , $\text{CO}_2\text{-C}_1\text{-C}_{10}$ alkyl, $\text{SO}_2\text{-C}_1\text{-C}_{10}$ alkyl, $\text{C}_3\text{-C}_8$ cycloalkyl, $\text{C}_1\text{-C}_{10}$ alkoxy, $\text{C}_1\text{-C}_{10}$ alkyl, or Z optionally substituted by from 1 to 4 halogen, $\text{C}_1\text{-C}_{10}$ alkyl or $\text{C}_1\text{-C}_{10}$ alkoxy;

R^9 is (1) R^8 or (2) NR^8R^8 ; and

R^{10} is (1) $\text{C}_1\text{-C}_{10}$ alkyl, or (2) two R^{10} groups together with the N to which they are attached forming a 5 or 6-membered ring optionally substituted with $\text{C}_1\text{-C}_{10}$ alkyl;

and Z is (1) phenyl, (2) naphthyl, (3) or a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (4) a benzene ring fused to a $\text{C}_3\text{-C}_8$ cycloalkyl ring, (5) a benzene ring fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, (6) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, or (7) a 5 or 6-membered heterocyclic ring with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen fused to a $\text{C}_3\text{-C}_8$ cycloalkyl ring;

n is 0 to 5;

R² and R³ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl or (3) C₁-C₁₀ alkyl with 1 to 4 substituents selected from hydroxy, C₁-C₁₀ alkoxy, or halogen;

X is (1) -CH₂-, (2) -CH₂-CH₂-, (3) -CH=CH- or (4) -CH₂O-; where m is 0 or 1;

R⁴ and R⁵ are independently (1) hydrogen, (2) C₁-C₁₀ alkyl, (3) halogen, (4) NHR⁸, (5) OR⁸, (6) SO₂R⁹ or (7) NHSO₂R⁹;

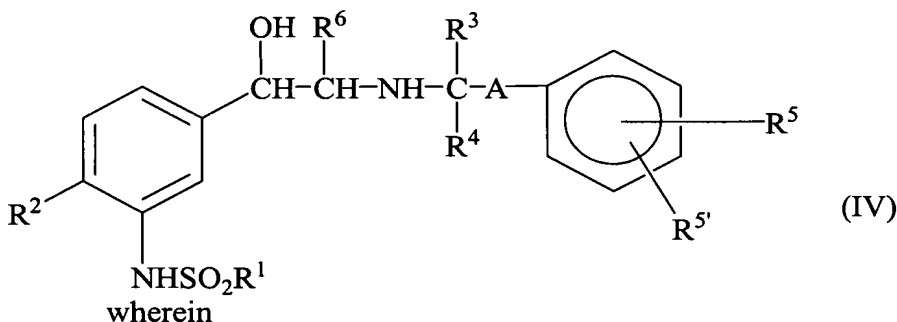
R⁶ is (1) hydrogen or (2) C₁-C₁₀ alkyl;

r is 0 to 3; and

R⁷ is Z-(R^{1a})_n;

where Z is defined above and R^{1a} is (1) R¹, (2) C₃-C₈ cycloalkyl, (3) phenyl optionally substituted with up to 4 groups independently selected from R⁸, NR⁸R⁸, OR⁸, SR⁸ or halogen, or (4) 5 or 6-membered heterocycle with from 1 to 4 heteroatoms selected from oxygen, sulfur or nitrogen, optionally substituted with up to four groups independently selected from oxo, R⁸, NR⁸R⁸, OR⁸, SR⁸, or halogen;

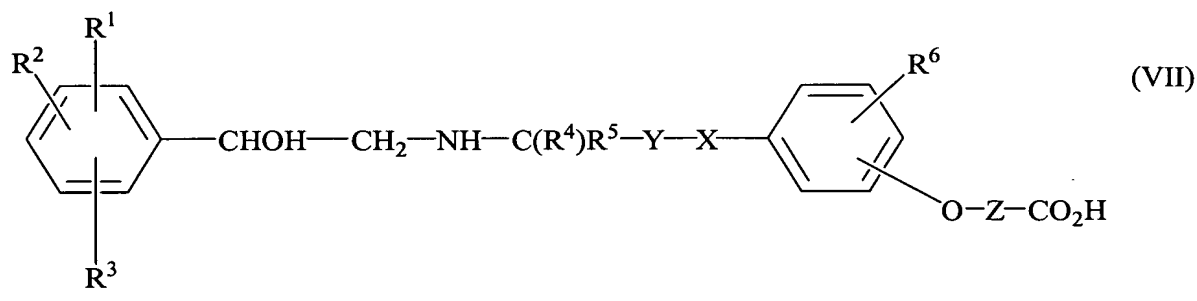
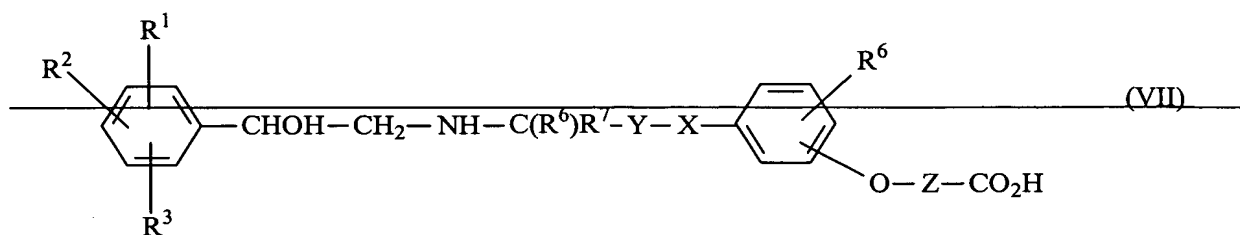
(c) a compound of formula (VI) is:



X is hydrogen, halogen, trifluoromethyl or lower alkyl, and

R is hydrogen; or lower alkyl which may have a suitable substituent selected from the group consisting of cyclo(C₃-C₇)alkyl, hydroxy, lower alkoxy, carboxy and lower alkoxycarbonyl; cyclo(C₃-C₇)alkyl ~~or~~ and lower alkanoyl;

(d) a compound of formula (VII) is represented by the following general formula:



wherein

R^1 is a hydrogen, fluorine, chlorine or bromine atom or a hydroxyl, hydroxymethyl, methyl, methoxyl, amino, formamido, acetamido, methylsulphonylamido, nitro, benzyloxy, methylsulphonylmethyl, ureido, trifluoromethyl or p-methoxybenzylamino group;

R^2 is a hydrogen, fluorine, chlorine or bromine atom or a hydroxyl group;

R^3 is a hydrogen, chlorine or bromine atom or a hydroxyl group,

R^4 is a hydrogen atom or a methyl group;

R^5 is a hydrogen atom or a methyl group;

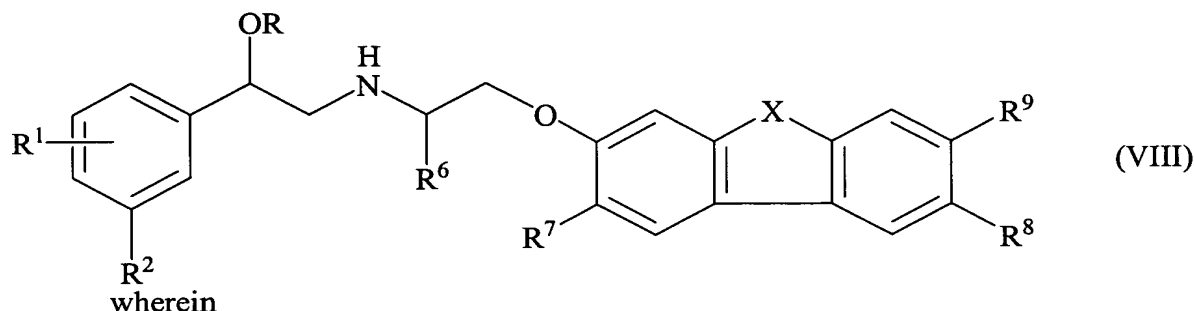
R^6 is a hydrogen, fluorine or chlorine atom or a methyl, methoxyl or hydroxy group;

X is an oxygen atom or a bond;

Y is an alkylene group of up to 6 carbon atoms or a bond; and

Z is an alkylene, alkenylene or alkynylene group of up to 10 carbon atoms; and

(e) a compound of formula (VIII) is represented by the following general formula:



R is hydrogen or methyl,

~~R¹ is hydrogen, halogen, hydroxy, benzyloxy, amino or hydroxymethyl,~~

~~R² is hydrogen, hydroxymethyl, -NHR³, -SO₂NR⁴R^{4'} or nitro,~~

~~R³ is hydrogen, methyl, -SO₂R⁵, formyl or -CONHR^{6'},~~

~~R⁴ and R^{4'} are independently hydrogen, lower alkyl or benzyl,~~

~~R⁵ is lower alkyl, benzyl or -NR⁴R^{4'},~~

~~R⁶ is hydrogen or lower alkyl,~~

~~R^{6'} is hydrogen or lower alkyl,~~

~~R⁹ is hydrogen, amino, acetyl amino or hydroxy, and~~

~~X is N, O, S or methylene;~~

~~provided that when X is N, O or S,~~

~~then R⁹ is hydrogen, either R⁷ or R⁸ is hydrogen, and the other is hydrogen, amino,~~

~~acetyl amino or hydroxy; and~~

~~provided that when X is methylene,~~

~~then both R⁷ and R⁸ are hydrogen~~

R¹ is hydrogen, halogen, hydroxy, benzyloxy, amino or hydroxymethyl,

R² is hydrogen, hydroxymethyl, -NHR³, -SO₂NR⁴R^{4'} or nitro, where R³ is hydrogen, methyl, -SO₂R⁵, formyl or -CONHR^{6'} and R⁴ and R^{4'} are independently hydrogen, lower alkyl or benzyl; and R⁵ is lower alkyl, benzyl or -NR⁴R^{4'}; and R^{6'} is hydrogen or lower alkyl;

R⁶ is hydrogen or lower alkyl,

R⁷ is hydrogen, amino, acetylamino, or hydroxyl;

R⁸ is hydrogen, amino, acetylamino, or hydroxyl;

X is N, O, S or methylene;

R⁹ is hydrogen, amino, acetylamino or hydroxy;

provided that when X is N, O or S,

then R⁹ is hydrogen, either R⁷ or R⁸ is hydrogen, and the other is hydrogen, amino, acetylamino or hydroxy; and

provided that when X is methylene,

then both R⁷ and R⁸ are hydrogen.

19-20. (Canceled).

21. (Previously Presented): The method of Claim 10, comprising treating a subject having dysuria.

22. (Previously Presented): The method of Claim 10, comprising treating a subject having pollakiuria.

23. (Previously Presented): The method of Claim 10, comprising treating a subject having urinary incontinence.

24. (Previously Presented): The method of Claim 10, comprising treating a subject having neurogenic bladder dysfunction.

25. (Previously Presented): The method of Claim 10, comprising treating a subject having nervous pollakiuria.

26. (Previously Presented): The method of Claim 10, comprising treating a subject having nocturia.

27. (Previously Presented): The method of Claim 10, comprising treating a subject having an unstable bladder.

28. (Previously Presented): The method of Claim 10, comprising treating a subject having cystospasm.

29. (Previously Presented): The method of Claim 10, comprising treating a subject having chronic cystitis.

30. (Previously Presented): The method of Claim 10, comprising treating a subject having chronic prostatitis.

31. (Previously Presented): The method of Claim 10, comprising treating a subject having overflow incontinence.

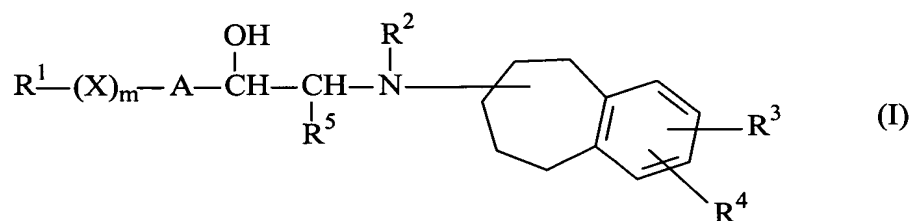
32. (Previously Presented): The method of Claim 10, comprising treating a subject having passive incontinence.

33. (Previously Presented): The method of Claim 10, comprising treating a subject having reflux incontinence.

34. (Previously Presented): The method of Claim 10, comprising treating a subject having urge incontinence.

35. (Previously Presented): The method of Claim 10, comprising treating a subject having urinary stress incontinence.

36. (Previously Presented) A compound of the general formula (I):



wherein

R¹ is aryl which may have one or more suitable substituent(s), heterocyclic group or cyclo(lower)alkyl,

R² is hydrogen or amino protective group,

R³ and R⁴ are independently hydrogen, halogen, hydroxy, amino, nitro, carboxy, protected carboxy, aryl, lower alkyl, hydroxy(lower)alkyl, amino(lower)alkyl, acyloxy(lower)alkyl, acylamino(lower)alkyl, lower alkylamino(lower)alkyl which may have one or more suitable substituent(s), mono or di-(lower)alkylamino, acylamino, acyl group, lower alkoxy, halo(lower)alkoxy, lower alkenyloxy, lower alkoxy(lower)alkoxy, aryloxy,

cyclo(lower)alkyloxy, heterocyclicoxy, ar(lower)alkyloxy, acyloxy, lower alkylcarbamoyl(lower)alkoxy, heterocycliccarbamoyl(lower)alkoxy, heterocycliccarbonyl(lower)alkoxy, N-lower alkyl-lower alkylcarbamoyl(lower)alkoxy, arylcarbamoyl(lower)alkoxy which may have lower alkoxy or di(lower)alkylamino, di-lower alkylsulfamoyloxy, N-lower alkyl-heterocyclic(lower)alkylcarbamoyl(lower) alkoxy, N-lower alkyl-lower alkylcarbamoyl(lower)alkoxy or N-lower alkyl-cyclo(lower)alkylcarbamoyl(lower)alkoxy,

R^5 is hydrogen, lower alkyl, or aryl,

A is lower alkylene which may have one or more suitable substituent(s) or lower alkenylene,

X is O, S, SO, SO₂ or NH, and

m is an integer of 0 or 1,

or a salt thereof,

wherein when R^1 is naphthyl and R^5 is H, then X is not O.

37. (New) The compound of claim 36, wherein

R^1 is phenyl which may have 1 or 2 suitable substituent(s) selected from the group consisting of hydroxy and lower alkylsulfonylamino,

R^2 is hydrogen,

R^3 is lower alkylcarbamoyl(lower)alkoxy, heterocycliccarbamoyl(lower)alkoxy, heterocycliccarbonyl(lower)alkoxy, N-lower alkyl-lower alkylcarbamoyl(lower)alkoxy, hydroxy, lower alkoxy, protected carboxy, arylcarbamoyl(lower)alkoxy which may have lower alkoxy or di(lower)alkylamino, di-lower alkylsulfamoyloxy, N-lower alkyl-heterocyclic(lower)alkylcarbamoyl(lower) alkoxy, N-lower alkyl-lower alkylcarbamoyl(lower)alkoxy or N-lower alkyl-cyclo(lower)alkylcarbamoyl(lower)alkoxy,

R^4 is hydrogen,

R^5 is hydrogen,

A is lower alkylene,

X is O, and

m is an integer of 1.

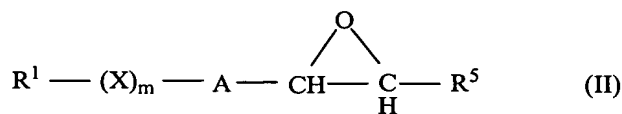
38. (Previously Presented) The compound of claim 37, wherein

R^1 is phenyl which may have hydroxy and methylsulfonylamino,

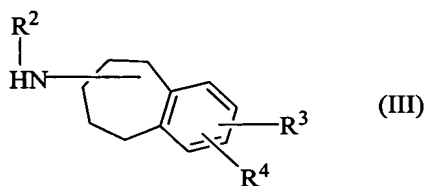
R^3 is ethylcarbamoylmethoxy, indolylcarbamoylmethoxy, piperidinocarbonylmethoxy, N-methylbutylcarbamoylmethoxy, hydroxy, butylcarbamoylmethoxy, methoxy, methoxycarbonyl, ethoxy, dimethylsulfamoyloxy, tetrazolylcarbamoylmethoxy, N-methylpyridylethylcarbamoylmethoxy, methoxyphenylcarbamoylmethoxy, thiazolylcarbamoylmethoxy, dihydroindolylcarbonylmethoxy, N-ethylpropylcarbamoylmethoxy, N-methylbutylcarbamoylmethoxy, N-ethylbutylcarbamoylmethoxy, dimethylaminophenylcarbamoylmethoxy or N-methylcyclohexylcarbamoylmethoxy.

39. (Previously Presented) A process for preparing a compound of claim 36, or a salt thereof, which comprises,

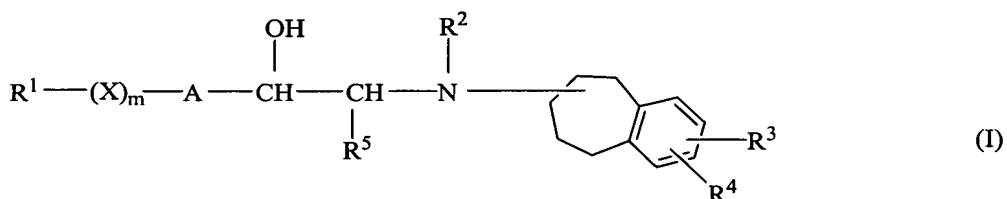
(i) reacting a compound (II) of the formula:



wherein R^1 , R^5 , A, X and m are each as defined in claim 36, with a compound (III) of the formula:

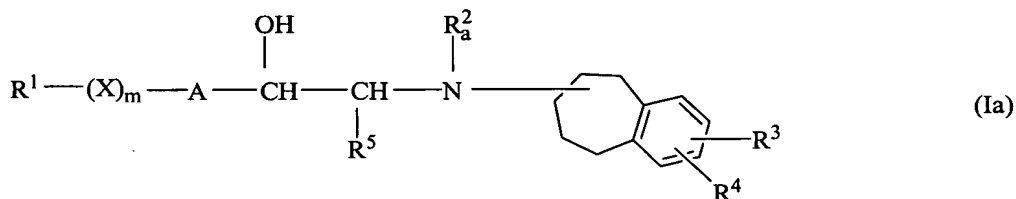


wherein R^2 , R^3 and R^4 are each as defined in claim 36, or a salt thereof, to give a compound (I) of the formula:



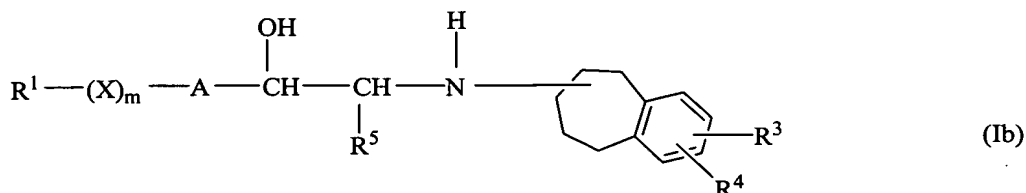
wherein R^1 , R^2 , R^3 , R^4 , R^5 , A, X and m are each as defined in claim 36, or a salt thereof, or

(ii) subjecting a compound (Ia) of the formula:



wherein R^1 , R^3 , R^4 , R^5 , A, X and m are each as defined in claim 36, and

R_a^2 is amino protective group, or a salt thereof, to elimination reaction of the amino protective group, to give a compound (Ib) of the formula:



wherein R^1 , R^3 , R^4 , R^5 , A, X and m are each as defined in claim 36, or a salt thereof.

40. (Previously Presented) A pharmaceutical composition which comprises the compound of claim 36 or a pharmaceutically acceptable salt thereof in admixture with a pharmaceutically acceptable carrier or excipient.

41. (Currently Amended) A method for making a pharmaceutical composition ~~or a medicament~~ comprising admixing the compound of claim 36 or a pharmaceutically acceptable salt thereof with a pharmaceutically acceptable carrier or excipient.

42. (Previously Presented) A compound of claim 36 or a pharmaceutically acceptable salt thereof in the form of a tablet, pellet, troche, capsule, suppository, cream, ointment, aerosol, powder for insufflation, solution, emulsion, or suspension.

43. (Currently Amended) A method for ~~the prophylactic and/or the therapeutic~~ treatment of pollakiuria or urinary incontinence which comprises administering an effective amount of a compound of claim 36 or a pharmaceutically acceptable salt thereof to a subject in need thereof.

44. (Previously Presented) A method for agonizing a β_3 adrenergic receptor comprising contacting said receptor with the compound of claim 36.

45. (Previously Presented) A method for inducing gut-selective sympathomimetic activity comprising administering an effective amount of the compound of claim 36 to a subject in need thereof.

46. (Currently Amended) A method for ~~the prophylactic and/or the therapeutic~~ treatment of a gastrointestinal disorder comprising administering an effective amount of the compound of claim 36 or a pharmaceutically acceptable salt thereof to a subject in need thereof.

47. (Currently Amended) A method for ~~the prophylactic and/or the therapeutic~~ treatment of an ulcer or pancreatitis comprising administering an effective amount of the compound of claim 36 or a pharmaceutically acceptable salt thereof to a subject in need thereof.

48. (Previously Presented) A method for inducing lypolysis comprising administering an effective amount of the compound of claim 36 or a pharmaceutically acceptable salt thereof to a subject in need thereof.